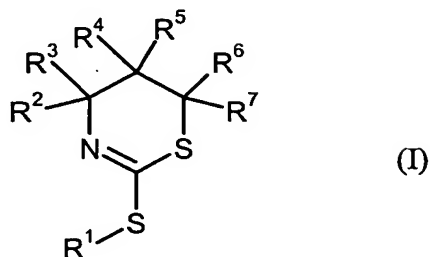


**Claims**

1. A compound of the formula (I)



in which

$R^1$  represents hydrogen or represents in each case optionally substituted alkyl, aryl or heterocyclyl,

and

$R^2$  to  $R^7$  independently of one another represent hydrogen or represent in each case optionally substituted alkyl, aryl or cycloalkyl, where at least one of the substituents  $R^2$  to  $R^7$  is different from hydrogen,

or

in each case two substituents from the group consisting of  $R^2$  to  $R^7$ , together with the C atoms to which they are attached, represent an optionally substituted carbocyclic ring, and the remaining substituents from the group consisting of  $R^2$  to  $R^7$  represent hydrogen,

and a metal salt or an acid addition compound thereof.

2. The compound as claimed in claim 1, characterized in that, in formula (I),

5           R<sup>1</sup>     represents hydrogen or represents in each case optionally substituted  
              C<sub>1</sub>-C<sub>12</sub>-alkyl, C<sub>6</sub>-C<sub>10</sub>-aryl or 5- to 7-membered heterocyclyl having 1  
              to 4 identical or different heteroatoms, which optionally contains a  
              fused-on 6-membered aromatic ring,

and

10           R<sup>2</sup> to R<sup>7</sup> independently of one another represent hydrogen or represent in each  
              case optionally substituted C<sub>1</sub>-C<sub>12</sub>-alkyl, C<sub>6</sub>-C<sub>10</sub>-aryl or C<sub>3</sub>-C<sub>8</sub>-  
              cycloalkyl, where at least one of the substituents R<sup>2</sup> to R<sup>7</sup> is different  
              from hydrogen,

15           or

              two substituents from the group consisting of R<sup>2</sup> to R<sup>7</sup>, together with the C  
              atoms, to which they are attached, represent an optionally substituted 3- to 12-  
              membered carbocyclic ring and the remaining substituents from the group  
20           consisting of R<sup>2</sup> to R<sup>7</sup> represent hydrogen.

3. The compound as claimed in at least one of claims 1 or 2, characterized in  
that, in formula (I),

25           R<sup>1</sup>     represents hydrogen, represents C<sub>1</sub>-C<sub>8</sub>-alkyl which is optionally mono-  
              to pentasubstituted by identical or different substituents from the  
              group consisting of halogen, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>1</sub>-C<sub>6</sub>-haloalkyl and C<sub>1</sub>-  
              C<sub>6</sub>-haloalkoxy, represents C<sub>6</sub>-C<sub>10</sub>-aryl which is mono- to trisubstituted  
              by identical or different substituents from the group consisting of  
30           halogen, C<sub>1</sub>-C<sub>8</sub>-alkyl, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>1</sub>-C<sub>6</sub>-haloalkyl, C<sub>1</sub>-C<sub>6</sub>-  
              haloalkoxy, hydroxyl, nitro, nitrilo, amino, (di)-C<sub>1</sub>-C<sub>6</sub>-alkylamino, C<sub>3</sub>-

5                   C<sub>8</sub>-cycloalkyl, phenyl and phenoxy, or represents 5- to 6-membered heterocyclyl having 1 to 3 identical or different heteroatoms from the group consisting of N, O, S, which optionally contains a fused-on aromatic 6-membered ring and which is optionally substituted by C<sub>1</sub>-C<sub>8</sub>-alkyl,

and

10                   R<sup>2</sup> to R<sup>7</sup> independently of one another represent hydrogen, represent C<sub>1</sub>-C<sub>12</sub>-alkyl which is optionally mono- to pentasubstituted by identical or different substituents from the group consisting of halogen, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>1</sub>-C<sub>6</sub>-haloalkyl and C<sub>1</sub>-C<sub>6</sub>-haloalkoxy, represent C<sub>6</sub>-C<sub>10</sub>-aryl which is optionally mono- to pentasubstituted by identical or different substituents from the group consisting of halogen, C<sub>1</sub>-C<sub>8</sub>-alkyl, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>1</sub>-C<sub>6</sub>-haloalkyl and C<sub>1</sub>-C<sub>6</sub>-haloalkoxy, or represent C<sub>3</sub>-C<sub>8</sub>-cycloalkyl which is optionally mono- to pentasubstituted by identical or different substituents from the group consisting of halogen, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>1</sub>-C<sub>6</sub>-haloalkyl and C<sub>1</sub>-C<sub>6</sub>-haloalkoxy, where at least one of the substituents R<sup>2</sup> to R<sup>7</sup> is different from hydrogen,

20

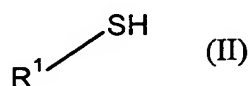
or

25                   two substituents from the group consisting of R<sup>2</sup> to R<sup>7</sup>, together with the C atoms to which they are attached, represent a 3- to 12-membered carbocyclic ring which is optionally mono- to pentasubstituted by identical or different substituents from the group consisting of halogen, C<sub>1</sub>-C<sub>8</sub>-alkyl, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>1</sub>-C<sub>6</sub>-haloalkyl and C<sub>1</sub>-C<sub>6</sub>-haloalkoxy, and the remaining substituents from the group consisting of R<sup>2</sup> to R<sup>7</sup> represent hydrogen.

4. A process for preparing compounds as claimed in claim 1, characterized in that

mercaptans of the formula (II) or salts thereof

5

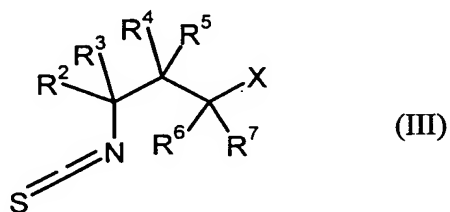


in which

$\text{R}^1$  is as defined in claim 1

10

are reacted with compounds of the general formula (III)



in which

15

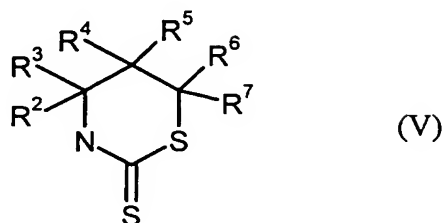
$\text{R}^2$  to  $\text{R}^7$  are as defined in claim 1,

and represents X halogen or a leaving group,

20

if appropriate in the presence of a diluent and if appropriate in the presence of an acid binder and if appropriate in the presence of a catalyst.

5. A compound of the formula



5 in which

R² to R⁷ are as defined in claim 1,

or a salt thereof,

10

except for

4-methyl-1,3-thiazinane-2-thione, CAS 5554-49-4;

4,6,6-trimethyl-1,3-thiazinane-2-thione, CAS 6268-74-2;

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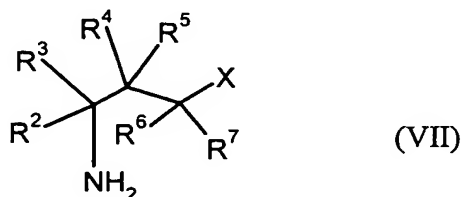
6-methyl-1,3-thiazinane-2-thione, CAS 13091-77-5;

5-methyl-4-phenyl-1,3-thiazinane-2-thione, CAS 37814-88-3;

4,4,6-trimethyl-1,3-thiazinane-2-thione, CAS 79696-63-2

are novel and also form part of the subject-matter of the present invention.

20 6. A process for preparing compounds as claimed in claim 5, characterized in that compounds of the formula (VII) or salts thereof



in which

$R^2$  to  $R^7$  are as defined in claim 1,

and

5 X represents halogen or a leaving group,

are reacted with carbon disulfide, if appropriate in the presence of a diluent and if appropriate in the presence of an acid binder.

10 7. The use of compounds as claimed in claim 1 as microbicides for protecting industrial materials.

8. The use as claimed in claim 7, characterized in that the industrial materials are wood, plastics, paints, varnishes and plaster.

15 9. A method for protecting industrial materials against attack and/or destruction by microorganisms, characterized in that at least one compound of the formula (I) as claimed in claim 1 is allowed to act on the microorganism or its habitat.

20 10. A microbicidal composition for protecting industrial materials, which composition comprises at least one compound of the formula (I) as claimed in claim 1 and at least one solvent or diluent and also, if appropriate, processing auxiliaries and, if appropriate, further antimicrobially active compounds.

25 11. The composition as claimed in claim 10, characterized in that it comprises at least one further antimicrobially active compound from the group consisting of the fungicides, bactericides, acaricides, nematocides, algacides and insecticides.

30

12. An industrial material which comprises at least one compound as claimed in claim 1.
- 5 13. The use of a compound as claimed in claim 1 for controlling fungi or for preventing fungal attack.
- 10 14. The method for controlling or for preventing fungal attack on plants, characterized in that, in any order or simultaneously, a site of the plant attacked by fungi or threatened by fungal attack or the location in which it grows is treated with at least one compound of the formula (I) as claimed in claim 1.